

THRUST AREAS OF FUTURE RESEARCH IN NATURAL RUBBER CULTIVATION

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There is increasing demand for natural rubber (NR) and there are genuine concerns if the existing rubber plantations in the world will be sufficient to meet its rising global demand. Agro-climatically best suited lands for NR cultivation in almost all major NR producing countries of the world are nearly saturated. Therefore, supply of NR from the traditional areas has also more or less stabilized. NR cultivation is being extended to less suitable lands in non-traditional areas. This paper analyses the thrust areas of future research in natural rubber cultivation in both the traditional and non-traditional regions.

Classical breeding and selection during the past 100 years has led to substantial genetic enhancement of *Hevea brasiliensis*. Molecular breeding and marker assisted selection will be necessary to achieve further significant breakthroughs in genetic enhancement of this tree crop. The need to develop more hardy clones that can tolerate biotic and abiotic stresses is emphasized. Shortening the immaturity period, developing optimal harvesting practices, including scientific use of yield stimulants, sustainability of rubber growing soils, concerns about monoculture and biodiversity, farm mechanization, socio-cultural and economic issues, environmental concerns, climate change etc. are some of the other areas identified for focused research in the years ahead to increase the supply of NR. Developing superior clones and effective extension delivery are central to achieving this objective. The paper concludes by raising certain pertinent questions that beg for immediate answers and with a call for scientists to think out of the box to address newly emerging challenges and opportunities in natural rubber cultivation.

Keywords: Climate change, Ecological cost, Genomics, Harvesting, Markers, Mono-cropping, Research priorities

Large scale commercial cultivation of plantation crops throughout the world has a strong colonial legacy (Barlow *et al.*, 1994). European colonialists successfully introduced plantation crops in their colonies in Asia, Africa and Latin America and natural rubber was perhaps the youngest of them all, as its commercial cultivation

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In response to a request from the Director, Rubber Research Institute of India (RRII) to share my views and vision on future thrust areas of research on natural rubber (NR), I shall endeavor to share some of my thoughts and make an attempt to assemble them on a planning platform.

To blend what RRII is now doing with my thoughts for the future, I thought it would be more rewarding if the present Director of RRII (Dr. James Jacob) also joins me as a co-author. I am happy he has agreed. This article is relevant not just for researchers, but also for extension personnel, policy makers and administrators, both in India and other NR growing countries.